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IN THE CLAIMS:

Claim 9 is herein cancelled. Claim 28 was previously cancelled. Claim 1 has been amended herein. New claims 29-13 are presented herein. All of the pending claims 1, 2, 4-8, and 10-27, as well as new claims 29-32, are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as amended.

Listing of the Claims:

1. (Currently amended) A recombinant receptor comprising:

an extracellular ligand binding domain derived from a receptor; and

a cytoplasmic domain derived from a receptor, wherein at least one activation site of said cytoplasmic domain has been inactivated by either mutation, deletion, or mutation and deletion, said cytoplasmic domain comprising at least two parts: a first part derived from a cytoplasmic domain of a receptor and a second part comprising a heterologous bait polypeptide which is heterologous to said cytoplasmic domain of said receptor from which said first part is derived;

wherein said cytoplasmic domain comprises at least a JAK binding site;

wherein said recombinant receptor is activated by binding of a ligand to said extracellular ligand binding domain and by binding of a prey polypeptide to said heterologous bait polypeptide.

2. (Original) The recombinant receptor of claim 1, wherein said recombinant receptor is a homomultimerizing receptor.

3. (Origina) The recombinant receptor of claim 1, wherein said recombinant receptor is a heteromultimerizing receptor.

4. (Original) The recombinant receptor of claim 1, wherein the binding of said prey polypeptide to said heterologous bait polypeptide is dependent upon a modification state of said heterologous bait polypeptide.

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5. (Original) The recombinant receptor of claim 4, wherein said modification state comprises a presence or an absence of a modification selected from the group consisting of phosphorylation, acetylation, acylation, methylation, ubiquitinilation and glycosylation.

6. (Previously Presented) The recombinant receptor of claim 4, wherein said modification state comprises proteolytic cleavage or no proteolytic cleavage of said heterologous bait polypeptide before binding of said heterologous bait polypeptide to said prey polypeptide.

7. (Original) The recombinant receptor of claim 4, wherein a change of said modification state is dependent upon the binding of said ligand to said extracellular ligand binding domain.

8. (Previously Presented) The recombinant receptor of claim 1, wherein said prey polypeptide is a fusion protein comprising at least one activation site.

9. (Cancelled) ~~The recombinant receptor of claim 1, wherein said cytoplasmic domain comprises a leptin receptor cytoplasmic domain or functional fragment thereof including at least one inactivated tyrosine phosphorylation site, or a fragment thereof retaining at least the JAK binding site~~.

10. (Withdrawn) A prey polypeptide comprising:
a first polypeptide that interacts with a bait polypeptide; and
a second polypeptide comprising at least one activation site.

11. (Withdrawn) A prey polypeptide, comprising:
a first polypeptide that interacts with a bait polypeptide; and
a second polypeptide comprising at least one activation site;
wherein the first polypeptide interacts with the heterologous bait polypeptide of the recombinant receptor of claim 1.

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12. (Original) A vector encoding the recombinant receptor of claim 1.

13. (Withdrawn) A vector encoding the prey polypeptide of claim 10.

14. (Original) A eukaryotic cell comprising the recombinant receptor of claim 1.

15. (Withdrawn) A eukaryotic cell comprising the prey polypeptide of claim 10.

16. (Original) The eukaryotic cell of claim 14, wherein said eukaryotic cell is selected from the group consisting of a mammalian cell, a fungal cell and a plant cell.

17. (Withdrawn) The eukaryotic cell of claim 15, wherein said eukaryotic cell is selected from the group consisting of a mammalian cell, a fungal cell and a plant cell.

18. (Previously Presented) A cloning vector encoding a recombinant receptor, comprising:

a nucleotide sequence encoding the cytoplasmic domain, wherein the nucleotide sequence comprises at least one restriction site allowing an in frame fusion of a nucleic acid fragment encoding the bait polypeptide;

wherein insertion of the nucleic acid fragment encoding the bait polypeptide in the cloning vector results in the vector of claim 12.

19. (Withdrawn) A kit for constructing a vector, said kit comprising:

a cloning vector encoding the vector of claim 13.

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20. (Withdrawn) A method for detecting compound-compound binding, said method comprising:

providing a recombinant receptor comprising:

an extracellular ligand binding domain;

a cytoplasmic domain comprising a heterologous bait polypeptide;

wherein said recombinant receptor is activated by binding of a ligand to said extracellular ligand binding domain and by binding of a prey polypeptide to said heterologous bait polypeptide; and

detecting the compound-compound binding with a reporter system.

21. (Withdrawn) The method according to claim 20, wherein said prey polypeptide comprises a first polypeptide that interacts with the heterologous bait polypeptide and a second polypeptide comprising at least one activation site.

22. (Withdrawn) The method according to claim 20, wherein said binding is modification state dependent.

23. (Withdrawn) The method according to claim 22, wherein said modification state is selected from the group consisting of phosphorylation, acetylation, acylation, methylation, ubiquitinilation and glycosylation.

24. (Withdrawn) The method according to claim 20, wherein said binding is mediated by three or more partners.

25. (Withdrawn) The method according to claim 24, wherein one or more of the partners is not completely of proteinaceous nature.

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26. (Withdrawn) The method of claim 20, further comprising:

providing a eukaryotic cell carrying the recombinant receptor; and

transforming or transfecting the eukaryotic cell with a vector encoding the prey polypeptide; wherein said prey polypeptide binds said heterologous polypeptide, said reporter system is induced.

27. (Previously Presented) The vector of claim 12, comprising a nucleotide sequence that encodes the cytoplasmic domain, wherein the nucleotide sequence comprises at least one restriction site configured to allow an in frame fusion of a nucleic acid fragment that encodes the bait polypeptide.

28. (Canceled).

29. (New) The recombinant receptor according to claim 1, wherein said cytoplasmic domain comprises at least one inactivated tyrosine phosphorylation site

30. (New) A recombinant receptor comprising:

an extracellular ligand binding domain derived from a receptor; and

a cytoplasmic domain derived from a receptor, wherein at least one activation site of said cytoplasmic domain has been inactivated by either mutation, deletion, or mutation and deletion, said cytoplasmic domain comprising at least two parts: a first part derived from a cytoplasmic domain of a receptor and a second part comprising a heterologous bait polypeptide which is heterologous to said cytoplasmic domain of said receptor from which said first part is derived;

wherein said cytoplasmic domain comprises a leptin receptor cytoplasmic domain including at least one inactivated tyrosine phosphorylation site, or a fragment thereof retaining at least the JAK binding site;

wherein said recombinant receptor is activated by binding of a ligand to said extracellular ligand binding domain and by binding of a prey polypeptide.

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31. (New) A recombinant receptor comprising:

an extracellular ligand binding domain derived from a receptor;

a bait polypeptide; and

a means for activating a reporter system;

wherein said reporter system is activated by binding of a ligand to said extracellular ligand binding domain and by binding of a recombinant prey polypeptide to said bait polypeptide.

32. (New) A recombinant receptor comprising:

an extracellular ligand binding domain derived from a receptor; and

a leptin receptor cytoplasmic domain including at least one inactivated tyrosine phosphorylation site, or a fragment thereof retaining at least the JAK binding site;

wherein said recombinant receptor is activated by binding of a ligand to said extracellular ligand binding domain and by binding of a prey polypeptide.